APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,869	02/25/2002	Jae-Woo Roh	DE-1344	4709

		EXAMINER
7590	08/11/2004	KERVEROS, JAMES C

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ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 08/11/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	
Office Action Summary	10/083,869	ROH ET AL.	
	Examiner	Art Unit	
	James C Kerveros	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 February 2002_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-22_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-22 are pending and are hereby presented for examination.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly
> pointing out and distinctly claiming the subject matter which the applicant
> regards as his invention.

Claims 7, 14 and 22 are rejected under 35 U.S.C. 112, second paragraph,

as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

Claims 7, 14 and 22 recite the limitation "the bit number "a"" in lines 1.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published
> under section 122(b), by another filed in the United States before the
> invention by the applicant for patent or (2) a patent granted on an
> application for patent by another filed in the United States before the
> invention by the applicant for patent, except that an international
> application filed under the treaty defined in section 351(a) shall have the
> effects for purposes of this subsection of an application filed in the United
> States only if the international application designated the United States ·

and was published under Article 21(2) of such treaty in the English language.

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chouly (US 6574775).

Regarding Claims 1 and 8, Chouly discloses a method of decoding encoded data based on a binary block code, comprising:

Forming an original block group, such as code of length N and dimension K from a source (2) divided into words of K bits [l.sub.0, . . . , l.sub.k-1] and processed by encoding means 3 which generate a code word of N bits [b.sub.0, . . , b.sub.N-1], where the encoded [b.sub.0] is defined as a reference block, (FIG. 1).

Encoding [b.sub.N-1] original blocks placed after the reference block [b.sub.0] group to generate n weighted blocks of n-bit codeword (weighting step 140), each of which corresponds to an A type weighted block or a B type weighted block (step 110) of input data [r.sub.0.sup.(j), . . . , r.sub.N-1.sup.(j)] divided into two groups, where one group corresponding to an A type weighted block (231) S.sub.(j)mod(m), and the other corresponding to a B type weighted block (232) S.sub.(j)mod(m), as shown in FIG. 2. Also, decoding means 203 produces the weighted sums [r''.sub.0.sup.(j), . . . ,r''.sub.N-1.sup.(j)] stored in the memory 201, FIGS. 5 and 6.

Decoding the n weighted blocks of n-bit codeword of the coding group to generate n corresponding original blocks of m-bit message using decoding means (203, FIG. 6) by applying the data [r.sub.i.sup.(j), epsilon.S.sub.(j)

mod(m)] to decoding means 231 for decoding the code C.sub.(j) mod(m), and the data [r.sub.i.sup.(j), i.epsilon.S.sub.(j)mod(m)] to decoding means 232 for decoding the code C'.sub.(j)mod(m).

Reconstructing a first original block of m-bit message from the sequence of the reference bits, such as input data [r.sub.0.sup.(0), . . . , r.sub.N-1.sup.(0)] using extraction means (21, FIG. 1) which deliver an estimation [I.sub.0, . . . , I.sub.K-1] of the transmitted data word.

Regarding Claims 2-4 and 9-11, Chouly discloses an n-bit codeword input data [r.sub.0.sup.(j), . . . , r.sub.N-1.sup.(j)] comprising (A) type weighted block (231) S.sub.(j)mod(m), and (B) type weighted block (232) S.sub.(j)mod(m), as shown in FIG. 2. Both words consist of binary code having a bit of "1" and bit of "0", which may be classified A type weighted block corresponding to bit of "1" and B type weighted block corresponding to a bit of "0".

Regarding Claims 5-7 and 12-14, Chouly discloses an n-bit codeword input data [r.sub.0.sup.(j), . . . , r.sub.N-1.sup.(j)], wherein if the original block group is a (2N-1), where "N" is a positive integer, assuming N=1, 2, 3, 4....N, then (2N-1)= 0, 1, 3, 5..., thus every ODD number is (A) type weighted block, if the original block group is a 2N, assuming N=1, 2, 3, 4....N, then 2N=2, 4, 6, 8, ..., then the reference block of n-bit codeword is a B type weighted block. Regarding Claims 7 and 14, in view of the 35 U.S.C. 112, second paragraph rejection, as best understood, in solving the claimed relation, where "a"= 0, 1, 2 3, 4 being a positive integer, and n-a= 8-2=6.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the
> prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not
> be negatived by the manner in which the invention was made.

Claim 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Chouly (US 6574775).

Regarding Claim 15, Chouly discloses an apparatus of decoding encoded

data based on a binary block code, comprising:

A buffering device source (2) for outputting a digitalized image signal such

as code of length N and dimension K from a source (2) divided into words of K

bits $[l_0, \ldots, l_{k-1}]$ and processed by encoding means 3 which generate

a code word of N bits $[b_0, \ldots, b_{N-1}]$, where the encoded $[b_0]$ is

defined as a reference block, (FIG. 1).

An encoding part (encoding means 3) for encoding $[b_{N-1}]$ original

blocks placed after the reference block $[b_0]$ group to generate n weighted

blocks of n-bit codeword (weighting step 140), each of which corresponds to an A

type weighted block or a B type weighted block (step 110) of input data

$[r_0^{(j)}, \ldots, r_{N-1}^{(j)}]$ divided into two groups, where one group

corresponding to an A type weighted block (231) $S_{(j)\mod(m)}$, and the other

corresponding to a B type weighted block (232) $S_{(j)\mod(m)}$, a shown in

FIG. 2. Also, decoding means 203 produces the weighted sums [$r''_0{}^{(j)}$, . . ,$r''_{N-1}{}^{(j)}$] stored in the memory 201, FIGS. 5 and 6.

A switch for (demultiplexer 230) which applies the data [$r_i{}^{(j)}$, $i.\epsilon.S^{(j)}\bmod(m)$] to decoding means (231 and 232) for decoding the code $C_{(j)\bmod(m)}$ and $C'_{(j)\bmod(m)}$, respectively and using weighting means 234 for producing weighted subsequent input data $r_i{}^{(j+1)}$ which are stored in the memory 201, FIG. 6.

A buffer (memory 201) for storing data from the channel [$r_0{}^{(0)}$, . . . , $r_{N-1}{}^{(0)}$] and the weighted sums [$r''_0{}^{(j)}$, . . . , $r''_{N-1}{}^{(j)}$], corresponding to an A type weighted block (231) $S_{(j)\bmod(m)}$, and the other corresponding to a B type weighted block (232) $S_{(j)\bmod(m)}$, as shown in FIGS. 2, 5 and 6.

Decoding part (203, FIG. 6) for decoding the n weighted blocks of n-bit codeword of the coding group to generate n corresponding original blocks of m-bit message using decoding means (203, FIG. 6) by applying the data [$r_i{}^{(j)}$, $\epsilon.S^{(j)}\bmod(m)$] to decoding means 231 for decoding the code $C_{(j)}\bmod(m)$, and the data [$r_i{}^{(j)}$, $.\epsilon.S_{(j)}\bmod(m)$] to decoding means 232 for decoding the code $C'_{(j)}\bmod(m)$.

Reconstructing a first original block of m-bit message from the sequence of the reference bits, such as input data [$r_0{}^{(0)}$, . . . , $r_{N-1}{}^{(0)}$] using extraction means (21, FIG. 1) which deliver an estimation [I_0, . . . , I_{K-1}] of the transmitted data word.

Chouly does not explicitly disclose the claimed features of a first control part for determining whether the original block is a first original block of m-bit message when the timing signal is first generated from the first buffer and a second control part for determining whether the weighted block is an A type weighted block or a B type weighted block. However, Chouly discloses first control part such as router 202 and a second control part such as demultiplexer 230 (FIG. 6) for applying the input data [r.sub.i.sup.(j), epsilon.S.sub.(j) mod(m)] to decoding means 231 for generating an A type weighted block (231) S.sub.(j)mod(m), and a B type weighted block (232) S.sub.(j)mod(m), as shown in FIG. 6. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use decoding means, as taught by Chouly, for determining whether the weighted block input data is an A or a B type, since Chouly already discloses two individual decoding means (231, 232) for decoding A or B type weighted data block, thus providing an optimum decoding by effecting iterations of a non-optimum decoding.

Regarding Claims 16 and 17, Chouly does not explicitly disclose a counting unit for counting the number of the timing signal provided from the first buffer, wherein the counting unit is reset on receiving an (n+1) timing signal generated from the first buffer. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use decoding means, as taught by Chouly, for determining whether the weighted block input data is an A or a B type, since Chouly already discloses two individual decoding

means (231, 232) for decoding A or B type weighted data block, thus providing

an optimum decoding by effecting iterations of a non-optimum decoding.

Regarding Claims 18-20, Chouly discloses an n-bit codeword input data

[r.sub.0.sup.(j), . . . , r.sub.N-1.sup.(j)] comprising (A) type weighted block

(231) S.sub.(j)mod(m), and (B) type weighted block (232) S.sub.(j)mod(m), as

shown in FIG. 2. Both words consist of binary code having a bit of "1" and bit of

"0", which may be classified A type weighted block corresponding to bit of "1"

and B type weighted block corresponding to a bit of "0".

Regarding Claim 21, discloses an n-bit codeword input data where the

sequence of the reference bits [r.sub.0.sup.(j)] is identical to the bit sequence of

the reference block.

Regarding Claim 22, in view of the 35 U.S.C. 112, second paragraph

rejection, as best understood, in solving the claimed relation, where "a"= 0, 1, 2

3, 4 being a positive integer, and n-a= 8-2=6.

Conclusion

5.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to James C Kerveros whose telephone number

is (703) 305-1081. The examiner can normally be reached on 9:00 AM TO 5:00

PM.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The

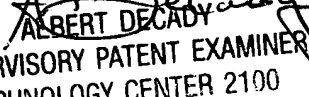fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

U.S. PATENT OFFICE
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Date: 3 August 2004
Office Action: Non-Final Rejection

By:

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